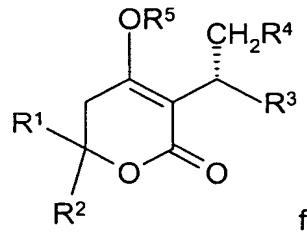
What is Claimed is

1. A process for preparing a compound of the formula I:



formula I

wherein

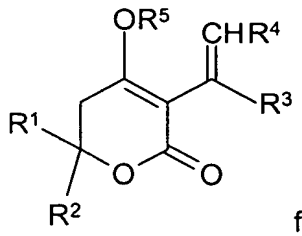
R^1 and R^2 independently of one another denote hydrogen or a group which is selected from among the group consisting of C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_6-C_{10}-aryl and C_1-C_4-alkylene-C_6-C_{10}-aryl, optionally with one, two or three substituents, selected from the group consisting of OH, NH_2, NH-CO-CH_3 or N(-CO-CH_3)$_2$, halogen, C_1-C_4-alkoxy and CF_3, while R^1 and R^2 do not simultaneously have the same meaning;

R^3 denotes an aryl substituted in the meta position, which optionally comprises at least one other substituent, the substituents being selected from the group consisting of F, Cl, Br, I, OH, O-SO_2-CF_3, NO_2, NH_2, NH-SO_2-(4-trifluoromethylpyridin-2-yl), N(-CH_2-aryl)$_2$, NY_1Y_2 with Y_1 and Y_2 selected from H, COO-alkyl, COO-CH_2-aryl, CO-alkyl and CO-aryl;

R^4 is selected from the group consisting of H and C_1-C_8-alkyl; and

R^5 is selected from the group consisting of H, $Si(CH_3)_3$, Li, Na, K, Cs, N(R')$_4$, while all the R' groups may be identical or different and are selected from C_1-C_8-alkyl and CH_2-aryl;

which process comprises hydrogenating a compound of the formula II



formula II

wherein the groups R^1 to R^5 are as previously defined in this claim, in the presence of a catalyst which contains at least one ligand in the form of a chiral 1,2-bis(phospholano)maleic anhydride.

2. The process according to claim 1, wherein R^1 and R^2 independently of one another are selected from the group consisting of methyl, ethyl, propyl, butyl, phenyl, benzyl, cyclohexyl, phenylethyl and phenylpropyl, optionally with a substituent selected from the group consisting of hydroxy, fluorine, chlorine, bromine, methoxy, ethoxy and CF_3.

3. The process according to one of claim 1, wherein R^1 denotes phenylethyl and R^2 denotes propyl or R^1 denotes propyl and R^2 denotes phenylethyl.

4. The process according to claim 1, wherein R^1 and R^2 are selected from phenylethyl and propyl, R^3 denotes optionally substituted phenyl with an NO_2 group in the meta position, R^4 denotes methyl and R^5 denotes hydrogen.

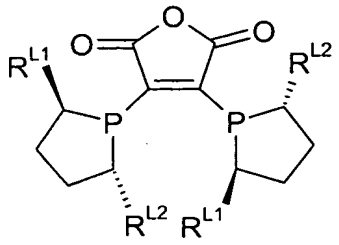
5. The process according to claim 1, wherein the starting compound of the formula I is used in the form of an E/Z mixture.

6. The process according to claim 5, wherein roughly 50:50 mixture of E and Z isomer is used.

7. The process according to claim 1 wherein the catalyst has the following structure:

[ligand^1-transition metal-ligand^2] anion,

wherein the ligand^1 denotes a chiral 1,2-bis(phospholano)maleic anhydride of formula III



formula III

wherein R^{L1} and R^{L2} which may be identical or different represent branched or unbranched C_1-C_8-alkyl.

8. The process according to claim 7, wherein the ligand^2 denotes an unsaturated cyclic hydrocarbon with 3 to 12 carbon atoms.

9. The process according to claim 7, wherein the ligand^2 denotes a cyclopentadiene, benzene, cycloheptatriene or cyclooctadiene system.

10. The process according to claim 9, wherein the ligand^2 denotes cyclopentadiene or 1,5-cyclooctadiene.

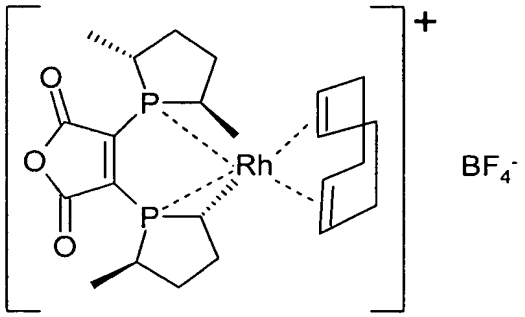
11. The process according to claim 7, wherein the ligand^1 of formula III, R^{L1} and R^{L2} represent branched or unbranched C_1-C_4-alkyl.

12. The process according to claim 11, wherein R^{L1} and R^{L2} both represent methyl.

13. The process according to claim 1, characterised in that the transition metal in the catalyst is rhodium-(I), ruthenium-(I) or iridium-(I).

14. The process according to claim 1, wherein the anion in the catalyst is BF_4^-, CF_3-CO-O^-, Cl^-, Br^- or I^-.

15. The process according to claim 1 wherein it is carried out in the presence of the following catalyst:



16. The process according to claim 1 wherein the hydrogenation is carried out in the presence of a base.

17. The process according to claim 16, wherein the base is selected from the group consisting of a hydroxide, C_1-C_5-alkoxide, bicarbonate, carbonate, di- and tribasic phosphate, borate, fluoride, optionally with C_1-C_4-alkyl or aryl-substituted amine, optionally with C_1-C_3 substituted silane.

18. The process according to claim 16 wherein the base is selected from alkali metal or alkaline earth metal methoxide, ethoxide or carbonate.

19. The process according to claim 16 wherein the base is used in an amount of about 1mol% to about 20mol%.

20. The process according to claim 1 wherein the ratio (in mol) of substrate/catalyst is about 200/1 to 5000/1.

21. The process according to claim 1 wherein the temperature during hydrogenation is about 20°C to about 100°C.

22. The process according to claim 1 wherein the hydrogen pressure during hydrogenation is about 2 bar to about 100 bar.